

\*\*\*\*\* QUERY RESULTS \*\*\*\*\*

=&gt; d his 123

(FILE 'HCAPLUS' ENTERED AT 12:04:15 ON 23 OCT 2008)  
 L23 10 S L22 OR L8

=&gt; d que 123

L2 93324 SEA FILE=HCAPLUS ABB=ON PLU=ON "FUEL CELLS"+OLD,UF/CT  
 L3 18111 SEA FILE=HCAPLUS ABB=ON PLU=ON HONEYCOMB OR HONEY(W)COMB  
 L4 206 SEA FILE=HCAPLUS ABB=ON PLU=ON L2 AND L3  
 L5 42701 SEA FILE=HCAPLUS ABB=ON PLU=ON SOLID (W) (OXIDE# OR ELECTROLY  
 ?)  
 L6 51 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L5  
 L7 4123 SEA FILE=HCAPLUS ABB=ON PLU=ON (FUEL OR AIR OR COOLING AIR)  
 (W) (POLE CELL# OR ELECTRODE# OR PASSAGE WAY OR CHANNEL? OR  
 ANODE CHANNEL?)  
 L8 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L7  
 L20 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND L3  
 L22 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (L2 OR L5)  
 L23 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 OR L8

=&gt; d his 129

(FILE 'COMPENDEX, INSPEC, BIOTECHNO, CONFSCI, PASCAL, SCISEARCH' ENTERED  
 AT 12:10:19 ON 23 OCT 2008)  
 L29 1 S L25 OR L28

=&gt; d que 129

L3 18111 SEA FILE=HCAPLUS ABB=ON PLU=ON HONEYCOMB OR HONEY(W)COMB  
 L5 42701 SEA FILE=HCAPLUS ABB=ON PLU=ON SOLID (W) (OXIDE# OR ELECTROLY  
 ?)  
 L7 4123 SEA FILE=HCAPLUS ABB=ON PLU=ON (FUEL OR AIR OR COOLING AIR)  
 (W) (POLE CELL# OR ELECTRODE# OR PASSAGE WAY OR CHANNEL? OR  
 ANODE CHANNEL?)  
 L20 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND L3  
 L24 4 SEA L20  
 L25 1 SEA L24 AND L5  
 L26 91 SEA L3 AND L5  
 L27 91 SEA L26 AND L3  
 L28 1 SEA L27 AND L7  
 L29 1 SEA L25 OR L28

=&gt; dup rem 123 129

FILE 'HCAPLUS' ENTERED AT 12:16:22 ON 23 OCT 2008  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'COMPENDEX' ENTERED AT 12:16:22 ON 23 OCT 2008  
 Compendex Compilation and Indexing (C) 2008  
 Elsevier Engineering Information Inc (EEI). All rights reserved.  
 Compendex (R) is a registered Trademark of Elsevier Engineering Information Inc.  
 PROCESSING COMPLETED FOR L23  
 PROCESSING COMPLETED FOR L29  
 L30 11 DUP REM L23 L29 (0 DUPLICATES REMOVED)  
 ANSWERS '1-10' FROM FILE HCAPLUS  
 ANSWER '11' FROM FILE COMPENDEX

=&gt; d 130 1-10 ibib abs hitind; d 130 ibib ab ind 11

L30 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:54294 HCAPLUS Full-text

DOCUMENT NUMBER: 146:145952

TITLE: Honeycomb-type hydrogen production apparatus, fuel battery power generator, electric vehicle, submarine, and hydrogen feed system using said honeycomb-type hydrogen production apparatus, and reaction tube for hydrogen production cell

INVENTOR(S): Okuyama, Ryoichi; Yamamoto, Yoshihiro; Ashida, Katsuji

PATENT ASSIGNEE(S): Gs Yuasa Corporation, Japan

SOURCE: PCT Int. Appl., 74pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007007915	A1	20070118	WO 2006-JP314314	20060713
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM JP 2007045695 A 20070222 JP 2006-89999 20060329 PRIORITY APPLN. INFO.: JP 2005-203990 A 20050713 JP 2006-89999 A 20060329				

AB The invention relates to a hydrogen production apparatus that can produce a hydrogen-containing gas at a low temperature and, at the same time, can realize size reduction. The hydrogen production apparatus is an apparatus for decomposing a fuel containing organic matter to produce a hydrogen-containing gas and is characterized by comprising a hydrogen production cell comprising a combination, in a honeycomb form, of a number of reaction tubes, comprising a cylindrical separating membrane, a fuel electrode provided on one of the inner and outer side faces of the cylindrical separating membrane, and an oxidizing electrode provided on the other side face, means for feeding a fuel containing organic matter and water into the fuel electrode, means for feeding an oxidizing agent into the oxidizing electrode, and means for generating and taking out a hydrogen-containing gas from the fuel electrode side, and further comprising a region, where the amount of the oxidizing agent fed is insufficient, provided on the oxidizing electrode side. There is also provided a reaction tube for a hydrogen production cell comprising a cylindrical separating membrane, a fuel electrode provided on one of the inner and outer side faces of the cylindrical separating membrane, and an oxidizing electrode provided on the other side face, characterized in that a region where the amount of the oxidizing agent fed is insufficient, is provided in a gas diffusion layer in the oxidizing electrode. The region where the amount of the oxidizing agent fed is insufficient, may be provided, for example, by masking a part of the gas diffusion layer in the oxidizing electrode.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 72  
 ST honeycomb structure hydrogen generating cell fuel cell power  
 plant  
 IT Reforming apparatus  
 (honeycomb structure hydrogen generating cell for fuel cell  
 power plant)  
 IT Fluoropolymers, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (honeycomb structure hydrogen generating cell for fuel cell  
 power plant)  
 IT Fuel cells  
 (polymer electrolyte; honeycomb structure hydrogen generating  
 cell for fuel cell power plant)  
 IT Fuel cells  
 (power plants; honeycomb structure hydrogen generating cell  
 for fuel cell power plant)  
 IT 12779-05-4  
 RL: CAT (Catalyst use); USES (Uses)  
 (honeycomb structure hydrogen generating cell for fuel cell  
 power plant)  
 IT 1333-74-0P, Hydrogen, preparation  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (honeycomb structure hydrogen generating cell for fuel cell  
 power plant)  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:266542 HCAPLUS Full-text  
 DOCUMENT NUMBER: 144:315075  
 TITLE: Compact and high-power fuel cells having  
 honeycomb solid oxide  
 structures and showing effective internal cooling  
 INVENTOR(S): Toriyama, Akira; Ishihara, Tatsumi  
 PATENT ASSIGNEE(S): Sinktank Fenicks K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006080006	A	20060323	JP 2004-264414	20040910
PRIORITY APPLN. INFO.:			JP 2004-264414	20040910

AB The fuel cells have (rectangular cross-sectional) honeycomb structures (of  
 YSZ, C12A7, etc.) consisting of quadrilateral cross-sectional honeycomb cells  
 for fuel electrodes (A), for air electrodes (B), and for cooling air (C). The  
 honeycomb cells B are arranged in contact with each sidewall of A, and the  
 honeycomb cells C are arranged in contact with corners of A and with sidewalls  
 of B to form check patterns of alternate arrangement. Corners of the  
 structures comprise A. The fuel cells may have covers comprising different  
 materials (e.g., alumina, zirconia) from the structures and containing air  
 paths and cooling air paths.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 57  
 ST solid oxide fuel cell rectangular honeycomb;  
 check pattern fuel air arrangement honeycomb SOFC; YSZ

- honeycomb electrolyte alumina cover fuel cell
- IT Ceramics  
(covers; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)
- IT Fuel cells  
(solid oxide; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)
- IT 409-21-2, Silicon carbide, uses 1302-88-1, Cordierite 1302-93-8, Mullite 1344-28-1, Alumina, uses 12033-89-5, Silicon nitride, uses 12597-68-1, Stainless steel, uses 12606-02-9, Inconel  
RL: DEV (Device component use); USES (Uses)  
(covers; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)
- IT 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>), uses 12005-57-1, C12A7 64417-98-7, Yttrium zirconium oxide 208116-16-9 220668-17-7  
RL: DEV (Device component use); USES (Uses)  
(electrolytes; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)
- IT 12597-69-2, Steel, uses  
RL: DEV (Device component use); USES (Uses)  
(heat-resistant, covers; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)
- IT 1314-36-9, Yttrium oxide (Y<sub>2</sub>O<sub>3</sub>), uses 12060-08-1, Scandia  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(stabilizers, electrolytes; compact and high-power fuel cells having honeycomb solid oxide structures and showing effective internal cooling)

L30 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1027964 HCAPLUS Full-text

DOCUMENT NUMBER: 143:309141

TITLE: Solid-state polyelectrolyte type fuel cell

INVENTOR(S): Amino, Toshikazu

PATENT ASSIGNEE(S): Ibiden Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 17 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050208356	A1	20050922	US 2005-84036	20050321
KR 2006043715	A	20060515	KR 2005-21970	20050316
KR 760492	B1	20071004		
JP 2005322621	A	20051117	JP 2005-78397	20050318
EP 1580831	A2	20050928	EP 2005-6162	20050321
EP 1580831	A3	20060607		
EP 1580831	B1	20080618		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
AT 398842	T	20080715	AT 2005-6162	20050321

CN 1838459 A 20060927 CN 2005-10056429 20050322  
 PRIORITY APPLN. INFO.: JP 2004-82734 A 20040322  
 AB A solid-state polyelectrolyte type fuel cell is provided in a honeycomb structure, including a plurality of honeycomb channels each having a polygonal cross section and disposed in a row with adjacent ones being isolated from each other with an isolation wall, is formed from a solid-state polyelectrolyte membrane, each of some of the honeycomb channels has a fuel electrode disposed on the inner wall thereof to provide a electrode channel while each of the other has an air electrode disposed on the inner wall thereof to provide an air electrode, and the fuel and air electrode channels are disposed to adjoin each other with the isolation wall being laid between them, thereby to provide a fuel cell which is compact, lightwt. and inexpensive.  
 IC ICM H01M008-10  
 ICS H01M004-86  
 INCL 429031000; X42-9 3.2; X42-9 4.0  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 IT Fuel cells  
 (polymer electrolyte; solid-state polyelectrolyte type fuel cell)  
 IT Fuel cell electrolytes  
 Honeycomb structures  
 Screen printing  
 (solid-state polyelectrolyte type fuel cell)

L30 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:976448 HCAPLUS Full-text  
 DOCUMENT NUMBER: 146:166235  
 TITLE: Unit cell for honeycomb type solid oxide fuel cell by mixed gas fuel cell method, stack structure employing the unit cell  
 INVENTOR(S): Hong, Seong Ahn; Oh, In Hwan; Lim, Tae Hoon; Nam, Suk Woo; Ha, Heung Yong; Yoon, Sung Pil; Han, Jong Hee; Cho, Eun Ae  
 PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea  
 SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given  
 CODEN: KRXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
KR 2005098420	A	20051012	KR 2004-23640	20040407
PRIORITY APPLN. INFO.:			KR 2004-23640	20040407
AB	Provided are a unit cell for a honeycomb type solid oxide fuel cell (SOFC) by a mixed gas fuel cell (MGFC) method which is improved in a gas sealing property and thermal impact resistance, a stack structure using the unit cell, and a method for operating SOFC. The unit cell comprises a fuel electrode channel which has a catalyst for the partial oxidation of hydrocarbons and where a mixture gas of hydrocarbon and air is injected; an air electrode channel which is installed independently with the fuel electrode channel and has a hydrocarbon inactive catalyst and where a mixture gas of hydrocarbon and air is injected; and an ion conductive solid electrolyte layer which is formed between the fuel electrode channel and the air electrode channel. Preferably the hydrocarbon inactive catalyst is alumina, silica or zirconia.			
IC	ICM H01M008-02			
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)			
ST	honeycomb structure solid oxide fuel cell			

IT Fuel cells  
 (solid oxide; unit cell for honeycomb  
 type solid oxide fuel cell by mixed gas fuel cell  
 method stack structure employing unit cell)

IT Honeycomb structures  
 (unit cell for honeycomb type solid oxide  
 fuel cell by mixed gas fuel cell method stack structure employing unit  
 cell)

IT Hydrocarbons, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (unit cell for honeycomb type solid oxide  
 fuel cell by mixed gas fuel cell method stack structure employing unit  
 cell)

IT 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>), uses 1344-28-1, Aluminum oxide  
 (Al<sub>2</sub>O<sub>3</sub>), uses 7631-86-9, Silica, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (unit cell for honeycomb type solid oxide  
 fuel cell by mixed gas fuel cell method stack structure employing unit  
 cell)

L30 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1026050 HCAPLUS Full-text

DOCUMENT NUMBER: 143:289539

TITLE: Solid-oxide-electrolyte fuel cell  
 stacks, and same fuel cells

INVENTOR(S): Nishimura, Naoyuki; Makino, Takaaki

PATENT ASSIGNEE(S): Mitsui Engineering and Shipbuilding Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005259490	A	20050922	JP 2004-68481	20040311
PRIORITY APPLN. INFO.:			JP 2004-68481	20040311
AB	The fuel cell stacks comprise air electrodes having electron-conduct thin films and fuel electrodes having solid electrolyte thin films, wherein both current collectors have honeycomb- or comb-like structure. Preferably, the periphery of the stacks are gas-tightly sealed with materials containing 1:(0.5-2):(0-0.35) mol. ratio of SiO <sub>2</sub> :CaO:Al <sub>2</sub> O <sub>3</sub> . Also claimed are solid oxide fuel cells comprising metallic manifolds for supplying/discharging gases, and a means for thermally insulating the stacks from the manifolds. The amount of the electron conduit materials can be diminished for cost saving and scale down sizing.			
IC	ICM H01M008-24			
ICS	C04B035-12; C04B035-48; C04B035-495; C04B035-50; H01M008-02; H01M008-12			
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)			
ST	Section cross-reference(s): 76			
ST	solid oxide fuel cell electrode current collector structure; lanthanum chromite conductor film fuel cell electrode current collector; manganite lanthanum conductor fuel cell anode current collector			
IT	Electric conductors (current collectors, in fuel cells; solid oxide fuel cell containing electrode current collector having honeycomb - or comb-like shape)			
IT	Fuel cell anodes			

Fuel cell cathodes  
(solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT Fuel cells  
(solid oxide; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT 120603-82-5, Lanthanum manganese strontium oxide (La<sub>0.85</sub>MnSr<sub>0.15</sub>O<sub>3</sub>)  
RL: DEV (Device component use); USES (Uses)  
(air cathode current collector; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT 155553-83-6P, Aluminum calcium silicon oxide  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(ceramic sealant for sealing stacks; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT 110584-65-1, Calcium chromium lanthanum oxide (Ca<sub>0.1</sub>CrLa<sub>0.9</sub>O<sub>3</sub>)  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(elec. conductive thin film on air cathode current collector; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT 39318-32-6, Magnesium zirconium oxide 64417-98-7, Yttrium zirconium oxide 65453-23-8, Cerium zirconium oxide 114168-16-0, Yttrium zirconium oxide (Y<sub>0.16</sub>Zr<sub>0.92</sub>O<sub>2.08</sub>)  
RL: DEV (Device component use); USES (Uses)  
(electrolyte thin film; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

IT 1305-78-8, Calcia, uses 7429-90-5, Aluminum, uses 7631-86-9, Silica, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(in ceramic sealant for sealing stacks; solid oxide fuel cell containing electrode current collector having honeycomb- or comb-like shape)

L30 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:780995 HCAPLUS Full-text

DOCUMENT NUMBER: 141:298657

TITLE: Honeycomb solid electrolytic fuel cell

INVENTOR(S): Toriyama, Akira

PATENT ASSIGNEE(S): Thinktank Phoenix Ltd., Japan

SOURCE: PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004082050	A1	20040923	WO 2004-JP3316	20040312
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,			

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
 SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
 TD, TG

EP 1612876 A1 20060104 EP 2004-720181 20040312  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK  
 CN 1757129 A 20060405 CN 2004-80006001 20040312  
 CN 100382369 C 20080416  
 JP 3902217 B2 20070404 JP 2005-503607 20040312  
 US 20060051641 A1 20060309 US 2005-528116 20050316  
 JP 2003-70854 A 20030314  
 WO 2004-JP3316 W 20040312

## PRIORITY APPLN. INFO.:

AB The title fuel cell has a honeycomb structure with a square shaped cross section made of solid electrolyte material, fuel electrode material, and air electrode material. The solid electrolyte material used for the cell comprises Y stabilized Zr, Sc stabilized Zr, La grade solid electrolyte, or O-, O<sub>2</sub>-, H+, or H- ion conductive solid electrolyte such as C12A7 (12CaO.7Al<sub>2</sub>O<sub>3</sub>). The fuel cell is characterized by having small size, large output, and good starting and load variation characteristics.

IC ICM H01M008-02  
 ICS H01M008-12; H01M008-04; H01M008-24

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 76

ST honeycomb solid electrolyte fuel cell  
 electrode material

IT Fuel cells  
 (honeycomb solid electrolytic fuel cell  
 having small size and large output)

IT 7440-67-7, Zirconium, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Y or Sc stabilized; honeycomb solid  
 electrolytic fuel cell having small size and large output)

IT 7440-20-2, Scandium, uses 7440-65-5, Yttrium, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (honeycomb solid electrolytic fuel cell  
 having small size and large output)

IT 12005-57-1, C12A7 208116-16-9 220668-17-7 763122-45-8  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (honeycomb solid electrolytic fuel cell  
 having small size and large output)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:42596 HCAPLUS Full-text

DOCUMENT NUMBER: 138:92868

TITLE: Fabrication of solid oxide fuel cells having a monolithic metal-electrolyte substrate  
 INVENTOR(S): Cochran, Joe K.; Lee, Kon Jiun; Liu, Meilin; Rauch, William L.

PATENT ASSIGNEE(S): Georgia Tech Research Corporation, USA

SOURCE: PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003005462	A2	20030116	WO 2002-US145	20020104
WO 2003005462	A3	20030403		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002337635	A1	20030121	AU 2002-337635	20020104
EP 1356534	A2	20031029	EP 2002-773137	20020104
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
US 20040072054	A1	20040415	US 2003-250466	20030702
US 7220506	B2	20070522		
PRIORITY APPLN. INFO.:			US 2001-259831P	P 20010105
			WO 2002-US145	W 20020104
AB	The present disclosure relates to hybrid monolithic fuel cells. In one embodiment, the fuel cells comprise a monolithic substrate composed of a metal material and an electrolyte material, the substrate defining a fuel channel and an oxidant channel that are separated by the electrolyte material. The disclosure also relates to methods for manufacturing hybrid monolithic fuel cells. In one embodiment, the methods comprise preparing a metal material, preparing an electrolyte material, and forming a hybrid monolithic fuel cell substrate comprising the metal and electrolyte materials in a one-step fabrication process.			
IC	ICM H01M			
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)			
IT	Slurries (deposition; fabrication of solid oxide fuel cells having monolithic metal-electrolyte substrate)			
IT	Fuel cell anodes Fuel cell cathodes Fuel cell electrolytes Honeycomb structures Interconnections, electric (fabrication of solid oxide fuel cells having monolithic metal-electrolyte substrate)			
IT	Hydrides RL: DEV (Device component use); USES (Uses) (paste containing; fabrication of solid oxide fuel cells having monolithic metal-electrolyte substrate)			
IT	Fuel cells (solid electrolyte; fabrication of solid oxide fuel cells having monolithic metal-electrolyte substrate)			
IT	1306-38-3, Ceria, uses 1313-99-1, Nickel oxide, uses 1314-23-4, Zirconia, uses 1314-35-8, Tungsten oxide, uses 1332-37-2, Iron oxide, uses 1344-70-3, Copper oxide 11098-99-0, Molybdenum oxide 11104-61-3, Cobalt oxide 11118-57-3, Chromium oxide 11129-60-5, Manganese oxide 12627-00-8, Niobium oxide RL: DEV (Device component use); USES (Uses) (fabrication of solid oxide fuel cells having monolithic metal-electrolyte substrate)			
IT	7440-02-0, Nickel, uses 11105-45-6			

RL: TEM (Technical or engineered material use); USES (Uses)  
 (interconnect layer; fabrication of solid oxide  
 fuel cells having monolithic metal-electrolyte substrate)  
 IT 7440-03-1, Niobium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt,  
 uses 11140-68-4, Titanium hydride  
 RL: DEV (Device component use); USES (Uses)  
 (paste containing; fabrication of solid oxide fuel  
 cells having monolithic metal-electrolyte substrate)

L30 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:42284 HCAPLUS Full-text  
 DOCUMENT NUMBER: 118:42284  
 ORIGINAL REFERENCE NO.: 118:7603a,7606a  
 TITLE: Design and manufacture of fuel-cell module with  
 yttria-stabilized zirconia electrolyte  
 INVENTOR(S): Rohr, Franz Josef; Reich, Andreas; Pfeifer, Norbert  
 PATENT ASSIGNEE(S): ABB Patent GmbH, Germany  
 SOURCE: Eur. Pat. Appl., 10 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 503526	A1	19920916	EP 1992-103983	19920309
EP 503526	B1	19960515		
R: CH, DE, FR, GB, LI, SE				
DE 4136448	A1	19920917	DE 1991-4136448	19911106
PRIORITY APPLN. INFO.:			DE 1991-4107924	A 19910313
			DE 1991-4136448	A 19911106
AB	The module comprises a plurality of gastightly stacked fuel-cell segments in-series connected with an elec. conducting interconnector of La(Mg,Ca,Sr)CrO3 and/or Ni. The segments are built of a self-supporting, honeycomb-shaped, and gastight Y2O3-stabilized ZrO2 electrolyte, which has a plurality of inner, on top and bottom open gas channels and porous electrode layers at least on the electrolyte inner channel walls. The gas channels are alternate fuel gas and air channels, coated resp. with Ni-ZrO2 anode and La(Sr)MnO3 cathode material. The module has on 1 end a gas distributor and on the other a gas collector built with ceramic or metallic plates.			
IC	ICM H01M008-24			
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)			
IT	Fuel cells (modules, design and manufacture of)			

L30 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:155377 HCAPLUS Full-text  
 DOCUMENT NUMBER: 116:155377  
 ORIGINAL REFERENCE NO.: 116:26253a,26256a  
 TITLE: Cell performance for solid oxide  
 fuel cells  
 AUTHOR(S): Mori, M.; Itoh, H.; Mori, N.; Asakawa, C.; Abe, T.  
 CORPORATE SOURCE: Cent. Res. Inst. Electr. Power Ind., Yokosuka, 240-01,  
 Japan  
 SOURCE: Comm. Eur. Communities, [Rep.] EUR (1991), EUR 13564,  
 Proc. Int. Symp. Solid Oxide Fuel Cells, 2nd, 1991,  
 821-9  
 CODEN: CECED9; ISSN: 0303-755X  
 DOCUMENT TYPE: Report

LANGUAGE: English

AB The cell performance of planar solid oxide fuel cells (SOFC) has been investigated for clarifying the correlation between various elec. collectors and overweight given on them. The cell performance was measured by using various elec. collectors, and the high potential was confirmed for a honeycomb-like elec. collector with Pt mesh; the cell with the electrode area of 3.1 cm<sup>2</sup> generated 550 mW/cm<sup>2</sup> at 920 mA/cm<sup>2</sup>, 0.60 V. Furthermore, the Y2O3-stabilized ZrO<sub>2</sub> electrolyte sheet was made  $\leq 13$  cm in diameter. As a basic experiment for the development of a tubular SOFC, disk type cells with porous supports of air or fuel electrode was fabricated by electrochem. vapor deposition, and the cell performance was 1140 mW/cm<sup>2</sup>, 0.60 V when the diameter of an effective electrode area is approx. 5 mm.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST fuel cell solid oxide performance

IT Fuel cells

(solid-state, performance of)

L30 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1981:50265 HCAPLUS Full-text

DOCUMENT NUMBER: 94:50265

ORIGINAL REFERENCE NO.: 94:8185a,8188a

TITLE: Fuel cells

PATENT ASSIGNEE(S): Japan, Defense Agency Technical Research and Development Institute, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55130078	A	19801008	JP 1979-37091	19790330
JP 60030068	B	19850713		

PRIORITY APPLN. INFO.: JP 1979-37091 A 19790330

AB Fuel cells are prepared with a unit cell consisting of a fuel (N<sub>2</sub>H<sub>4</sub>) chamber, a fuel electrode, an electrolyte chamber, an air electrode, and a honeycomb separator. The separator forms a boundary and has passages for the cooling air and the fuel-cell reaction products.

IC H01M008-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST fuel cell honeycomb separator

IT Fuel cells

(with honeycomb separator)

L30 ANSWER 11 OF 11 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER: 1989(5):45344 COMPENDEX Full-text

DOCUMENT NUMBER: 890543059

TITLE: Recent advances in Monolithic Solid Oxide Fuel Cell development.

AUTHOR: McPheeters, C.C. (Argonne Natl Lab, Argonne, IL, USA); Balachandran, U.; Blackburn, P.E.; Busch, D.E.; Dees, D.W.; Dorris, S.E.; Dusek, J.; Heiberger, J.J.; Leu, H.; Majumdar, S.; Mrazek, F.C.; Myles, K.M.; Picciolo, J.J.; Poeppel, R.B.

MEETING TITLE: Proceedings of the 23rd Intersociety Energy Conversion Engineering Conference - 1988 IECEC.

MEETING ORGANIZER: ASME, New York, NY, USA

MEETING LOCATION: Denver, CO, USA  
 MEETING DATE: 31 Jul 1988-05 Aug 1988  
 SOURCE: Proceedings of the Intersociety Energy Conversion Engineering Conference 23rd. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA.p 279-282  
 SOURCE: Proceedings of the Intersociety Energy Conversion Engineering Conference 23rd. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA.p 279-282  
 CODEN: PIECDE ISSN: 0146-955X  
 PUBLICATION YEAR: 1988  
 MEETING NUMBER: 12020  
 DOCUMENT TYPE: Conference Article  
 TREATMENT CODE: Application; Experimental  
 LANGUAGE: English  
 AB The Argonne Monolithic Solid Oxide Fuel Cell (MOSFC) is fabricated in a honeycomb structure having alternate corrugated and flat layers similar to corrugated paperboard. This honeycomb structure is lightweight yet strong. The materials used to fabricate the MOSFC include yttria-stabilized zirconia as the electrolyte, alkaline earth-doped lanthanum chromite as the interconnection material (bipolar plate), strontium-doped lanthanum manganite as the cathode or air electrode, and yttria-stabilized zirconia-nickel cermet as the anode or fuel electrode. Fabrication and performance details are presented. 5 Refs.  
 AN 1989(5):45344 COMPENDEX DN 890543059 Full-text  
 CC 702 Electric Batteries & Fuel Cells; 933 Solid State Physics; 812 Ceramics & Refractories; 531 Metallurgy & Metallography  
 CT \*FUEL CELLS: Fabrication; REFRACTORY MATERIALS: Zirconia; SOLIDS  
 ST SOLID OXIDE FUEL CELL; HONEYCOMB STRUCTURE;  
 YTTRIA-STABILIZED ZIRCONIA; LANTHANUM CHROMITE; LANTHANUM MANGANITE;  
 ZIRCONIA-NICKEL CERMET

=> d his nofil

(FILE 'HOME' ENTERED AT 11:47:17 ON 23 OCT 2008)

FILE 'HCAPLUS' ENTERED AT 11:47:29 ON 23 OCT 2008

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L1      1 SEA ABB=ON PLU=ON US20060051641/PN
        D IBIB AB IT SC
        E FUEL CELLS/CT
        E E3+ALL
L2      93324 SEA ABB=ON PLU=ON "FUEL CELLS"+OLD,UF/CT
L3      18111 SEA ABB=ON PLU=ON HONEYCOMB OR HONEY(W)COMB
L4      206 SEA ABB=ON PLU=ON L2 AND L3
L5      42701 SEA ABB=ON PLU=ON SOLID (W) (OXIDE# OR ELECTROLY?)
L6      51 SEA ABB=ON PLU=ON L4 AND L5
L7      4123 SEA ABB=ON PLU=ON (FUEL OR AIR OR COOLING AIR) (W) (POLE
        CELL# OR ELECTRODE# OR PASSAGE WAY OR CHANNEL? OR ANODE
        CHANNEL?)
L8      6 SEA ABB=ON PLU=ON L6 AND L7
L9      27228 SEA ABB=ON PLU=ON (LONGITUD? OR LATERAL?) (2W) (DIRECTION?
        OR ARRANG? OR LOCAT?)
L10     0 SEA ABB=ON PLU=ON L8 AND L9
L11     15 SEA ABB=ON PLU=ON L7 AND L9
L12     6 SEA ABB=ON PLU=ON L5 AND L11
L13     5 SEA ABB=ON PLU=ON L2 AND L11
L14     6 SEA ABB=ON PLU=ON L12 OR L13
        D SCAN TI HIT
L15     123307 SEA ABB=ON PLU=ON L2 OR L5
L16     145 SEA ABB=ON PLU=ON L15 AND L9
L17     0 SEA ABB=ON PLU=ON L16 AND L3
L18     0 SEA ABB=ON PLU=ON L16 AND L1
L19     6 SEA ABB=ON PLU=ON L16 AND L7
        D SCAN L19 TI HIT

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FILE 'STNGUIDE' ENTERED AT 12:03:19 ON 23 OCT 2008

FILE 'HCAPLUS' ENTERED AT 12:04:15 ON 23 OCT 2008

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L20     20 SEA ABB=ON PLU=ON L7 AND L3
L21     0 SEA ABB=ON PLU=ON L20 AND (LONGITUD? OR LATERAL?)
L22     10 SEA ABB=ON PLU=ON L20 AND (L2 OR L5)
L23     10 SEA ABB=ON PLU=ON L22 OR L8

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FILE 'COMPENDEX, INSPEC, BIOTECHNO, CONFSCI, PASCAL, SCISEARCH' ENTERED  
AT 12:10:19 ON 23 OCT 2008

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L24     4 SEA ABB=ON PLU=ON L20
        D SCAN
L25     1 SEA ABB=ON PLU=ON L24 AND L5
        D TI KWIC
L26     91 SEA ABB=ON PLU=ON L3 AND L5
L27     91 SEA ABB=ON PLU=ON L26 AND L3
L28     1 SEA ABB=ON PLU=ON L27 AND L7
        D TI KWIC
L29     1 SEA ABB=ON PLU=ON L25 OR L28
        D QUE L23
        D QUE L29

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FILE 'HCAPLUS, COMPENDEX' ENTERED AT 12:16:22 ON 23 OCT 2008

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L30     11 DUP REM L23 L29 (0 DUPLICATES REMOVED)
        ANSWERS '1-10' FROM FILE HCAPLUS

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10/528116

ANSWER '11' FROM FILE COMPEINDEX  
D L30 1-10 IBIB ABS HITIND  
D L30 IBIB AB IND 11

FILE 'HCAPLUS' ENTERED AT 12:18:22 ON 23 OCT 2008  
L31 9 SEA ABB=ON PLU=ON L23 AND (AY<2005 OR PY<2005 OR PRY<2005)

FILE 'STNGUIDE' ENTERED AT 12:19:15 ON 23 OCT 2008